

Article

Qualitative and quantitative investigation of multiple Large Eddy Simulation aspects for pollutant dispersion in street canyons using OpenFOAM

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Received: date; Accepted: date; Published: date

Supplementary Material:

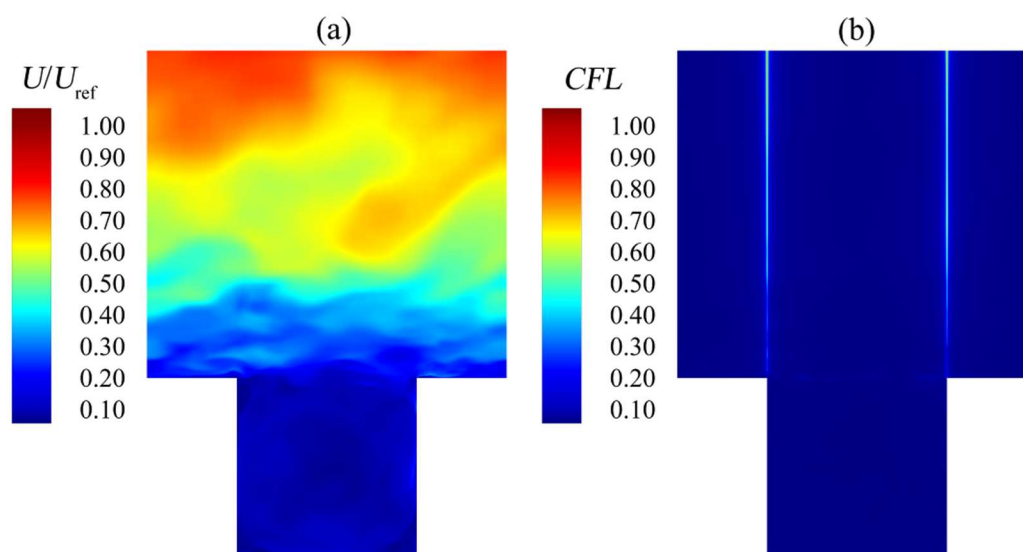


Figure S1: The instantaneous *CFL* number inside the domain at $t = 1300s$.

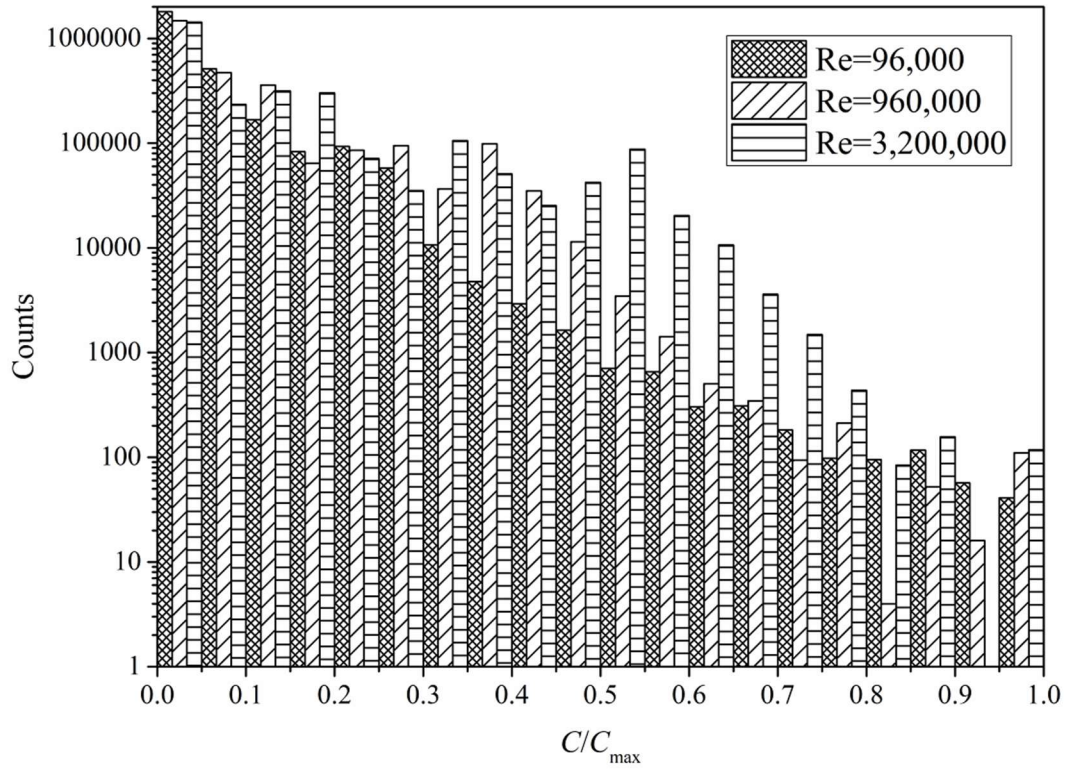


Figure S2: Frequency histogram for the dimensionless concentration inside the domain, for the studied Re numbers: $9.6 \cdot 10^4$, $9.6 \cdot 10^5$ and $3.2 \cdot 10^6$.

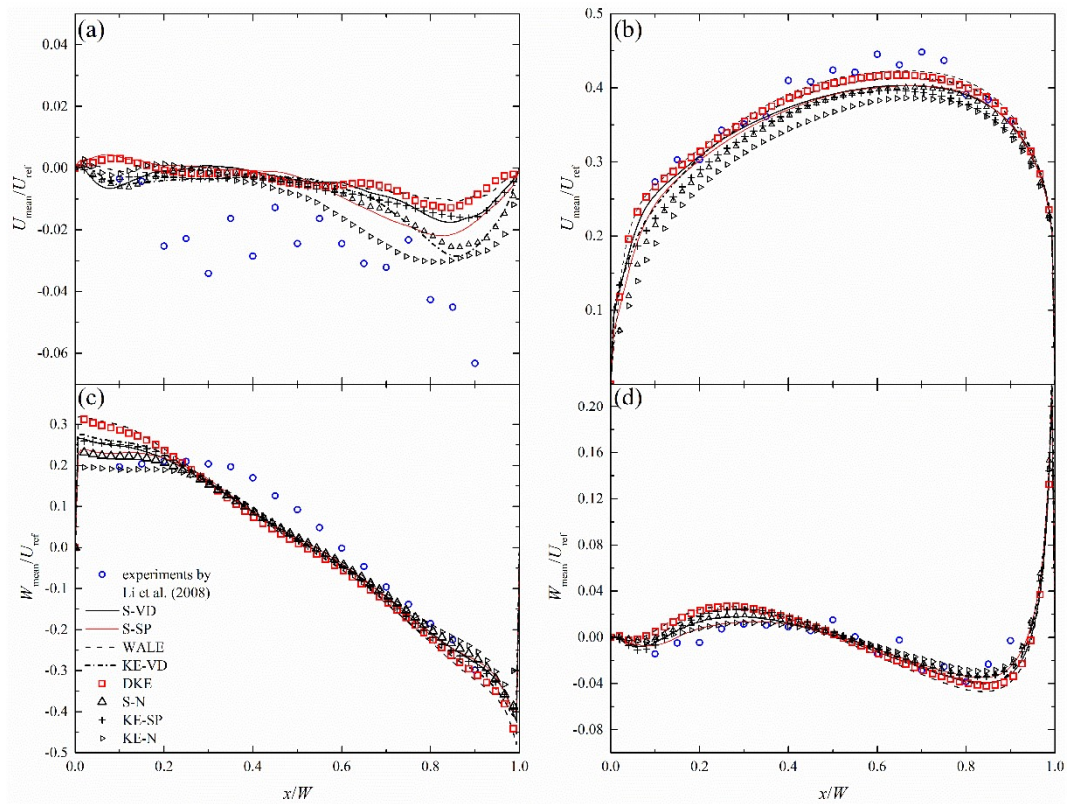


Figure S3: Normalised averages for U - and W - velocity components for a unity street canyon at: (a),(c) $z/H = 0.50$ and (b),(c) $z/H = 1.00$.

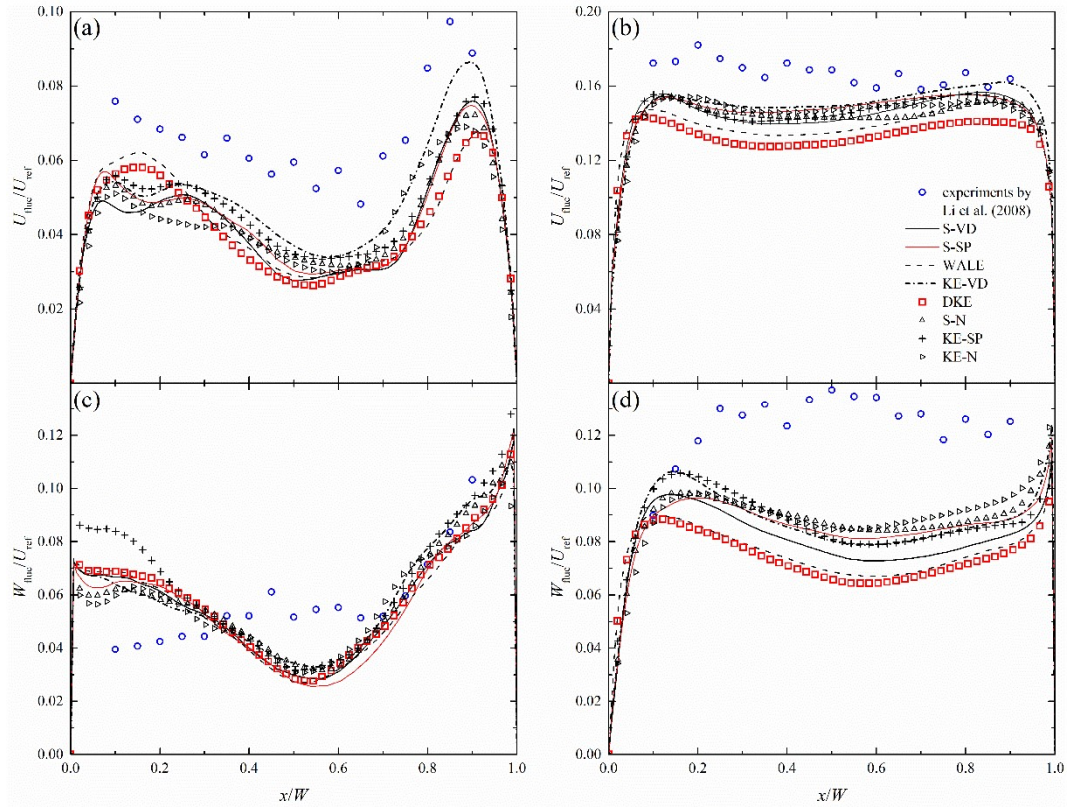


Figure S4: Normalised fluctuations for U - and W - velocity components for a unity street canyon at: (a),(c) $z/H = 0.50$ and (b),(c) $z/H = 1.00$.

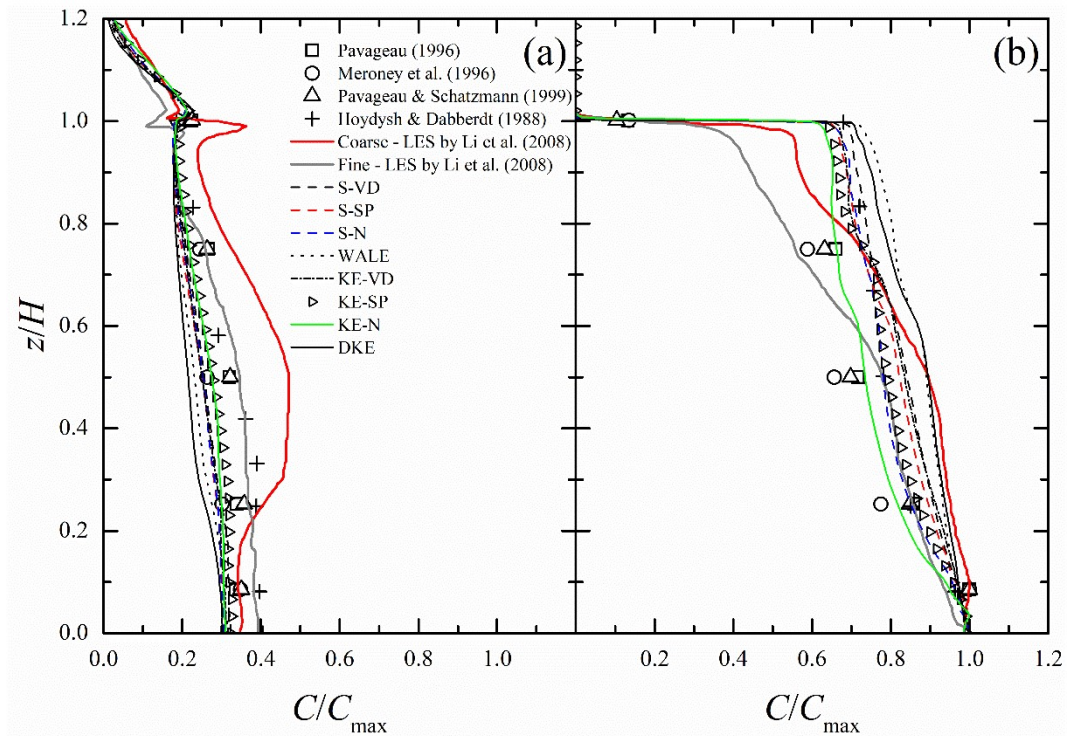


Figure S5: Vertical dimensionless concentration profiles for all the tested SGS models: (a) the downwind and (b) the upwind wall for the unity street canyon.

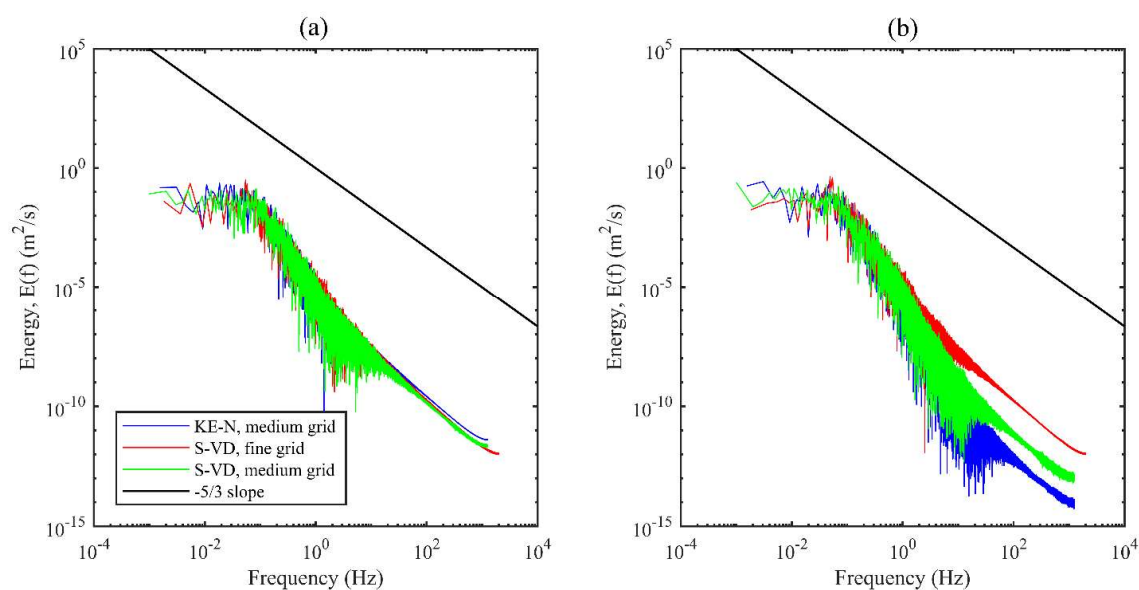


Figure S6: Turbulence energy spectra of the (a) U_x and (b) U_z velocity components, for three indicative simulations: KE-N in the medium grid and S-VD in the medium and the fine grid.

[attached separately]

Figure S7: Animation of the first 120 s of pollutant dispersion inside the canyon (with reference velocity is 5 m s^{-1} , $\text{Re} = 3,200,000$, k-equation SGS model along with the nutkWallFunction).

OpenFOAM Source files (without the calculated mesh or initial timestep)